

Title: ABLATION OF EXTERIOR OF STOMACH TO TREAT OBESITY
Inventors: Starkebaum, Prentice and Christopherson
Docket No.: P-11487.00

CLAIMS:

1. A method for treating obesity comprising ablating tissue on an exterior surface of a stomach of a patient with an ablation probe sized to fit the stomach.
2. The method for treating obesity of claim 1, further comprising:
monitoring gastric myoelectric activity of the stomach prior to the ablation to determine a baseline digestion rate;
monitoring the gastric myoelectric activity of the stomach after the ablation to determine a post-ablation digestion rate; and
ablating additional stomach tissue based on a comparison of the post-ablation digestion rate to the baseline digestion rate.
3. The method for treating obesity of claim 2, wherein monitoring gastric myoelectric activity comprises recording an electrogastrogram (EGG) of the patient.
4. The method for treating obesity of claim 2, wherein monitoring the gastric myoelectric activity of the stomach after the ablation comprises monitoring the gastric myoelectric activity of the stomach one week after the ablation.
5. The method for treating obesity of claim 2, wherein the baseline digestion rate comprises a baseline rate of gastric emptying and the post-ablation digestion rate comprises a post-ablation rate of gastric emptying.
6. The method for treating obesity of claim 1, wherein the comparison determines whether the ablation has slowed a peristaltic wave.
7. The method for treating obesity of claim 1, wherein ablating tissue comprises ablating at least a portion of at least one of a pacemaker region, interstitial cells of Cajal, smooth muscle cells, a splanchnic nerve, and a vagus nerve.

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8. The method for treating obesity of claim 1, wherein ablating tissue comprises:
 - accessing an abdominal cavity of the patient;
 - inserting the ablation probe to the abdominal cavity;
 - moving the ablation probe to a position proximate to the exterior surface of the stomach; and
 - activating the ablation probe to ablate at least a portion of the exterior surface of the stomach.
9. The method for treating obesity of claim 8, wherein the ablation probe comprises at least one of a radio frequency probe, a laser probe, an ultrasonic probe, a microwave probe, a thermal probe, a chemical probe, a mechanical probe, and a cryogenic probe.
10. The method for treating obesity of claim 8, wherein activating the ablation probe comprises delivering energy to the exterior surface of the stomach.
11. The method for treating obesity of claim 8, further comprising applying vacuum pressure to the exterior surface to immobilize at least a portion of the exterior surface.
12. An ablation system comprising:
 - a cannula inserted into an abdominal cavity of an obese patient during a laparoscopic surgery;
 - an ablation probe sized to fit a stomach of the patient inserted through the cannula and placed proximate an exterior surface of the stomach; and
 - an ablation source to control delivery of ablation energy via the ablation probe in an amount sufficient to ablate tissue from the exterior surface of the stomach and alter gastric myoelectric activity.
13. The ablation system of claim 12, further comprising at least one sensor to monitor a digestion rate.

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14. The ablation system of claim 13, wherein the sensor comprises at least one electrogastrogram (EGG) electrode placed on an abdomen of the patient to monitor the gastric myoelectric activity.
15. The ablation system of claim 12, where the ablation probe comprises at least one of a radio frequency probe, a laser probe, an ultrasonic probe, a microwave probe, a thermal probe, a chemical probe, a mechanical probe, and a cryogenic probe.
16. The ablation system of claim 12, wherein the ablation probe comprises at least one electrode and wherein the ablation source delivers electrical current to the electrode.
17. The ablation system of claim 16, wherein the ablation probe further comprises a conductive fluid delivery port adjacent the electrode, the system further comprises a conductive fluid source to deliver fluid to the fluid delivery port.
18. The ablation system of claim 12, wherein the ablation probe comprises an optical waveguide and wherein the ablation source delivers energy from a laser to the optical waveguide.
19. The ablation system of claim 12, wherein the ablation probe comprises a cryogenic probe and wherein the ablation source delivers cryogenic fluid to the cryogenic probe.
20. The ablation system of claim 12, further comprising a vacuum pressure source to apply vacuum pressure to the exterior surface of the stomach to immobilize at least a portion of the exterior surface.
21. An ablation system comprising:
means for ablating tissue of a stomach of an obese patient to alter gastric myoelectric activity in the stomach with ablation energy delivered to an exterior surface of the stomach;
and
means for controlling the delivery of the ablation energy.

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22. The ablation system of claim 21, further comprising means for monitoring the gastric myoelectric activity in the stomach of the patient.

23. The ablation system of claim 21, wherein the means for controlling the delivery of the ablation energy comprises at least one of a radio frequency source, a laser source, an ultrasonic source, a microwave source, a thermal source, a chemical source, a mechanical source, and a cryogenic source.

24. A method comprising:

ablating tissue on an exterior surface of a stomach of a patient with an ablation probe sized to fit the stomach; and
monitoring gastric activity of the stomach after the ablation.

25. The method of claim 24, wherein monitoring gastric activity comprises assessing the impact of the ablation upon one of gastroparesis, nausea, and gastroesophageal reflux disease.